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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,282	09/16/2003	Yasuyuki Matsuya	5259-000031	3218
27572	7590	06/12/2007	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			SWERDLOW, DANIEL	
		ART UNIT	PAPER NUMBER	
		2615		
			MAIL DATE	DELIVERY MODE
			06/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/663,282	MATSUYA, YASUYUKI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Daniel Swerdlow	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 April 2007.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 and 8-13 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 16 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>See Continuation Sheet</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date  
9/16/03,2/3/04,7/28/04,2/23/06,6/7/06.

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 6 and 7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 12 April 2007.

### *Drawings*

2. Figures 25 through 28 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. Pages 4 through 8 of the written description clearly indicate that these figures depict prior art.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4, 5, 8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sulavuori et al. (US Patent 5,636,264).

5. Regarding Claim 1, Sulavuori discloses a method of transmitting information (column 2, lines 39-43) comprising: on a transmitting side (Fig. 4A) converting speech signals from an interface 100 into a digitized speech signal 11 using CVSD (i.e., a noise shaping method) (column 7, lines 28-39) in an NRZ 1-bit data stream (Fig. 1, waveform B); using a high level for digital “1” and a low level for digital “0” (Fig. 1, waveform B), and using a return to zero pulse with a pulse width smaller than the pulse width of the NRZ signal to represent the high level (Fig. 1, pulse P) and a low level to represent the low level (Fig. 1) (column 3, lines 14-30); transmitting the signals as IR pulses (i.e., radio signals) (column 3, lines 3-7); and on a receiving side (Fig. 4B) driving an earphone 201 to produce a sound output by electrical signals obtained from the received signals (column 8, lines 3-30).

6. Regarding Claim 2, Sulavuori discloses a transmitting apparatus (Fig. 4A) comprising: a speech encoding block 104 that corresponds to the 1-bit conversion section claimed and converts speech signals into an NRZ 1-bit data stream (Fig. 1, waveform B) using CVSD (i.e., a noise shaping method) (column 7, lines 28-39); a pulse shaper block 105 that corresponds to the return-to-zero section claimed and uses a return to zero pulse to represent the high level (Fig. 1, pulse P) and a low level to represent the low level (Fig. 1); and an IR transmitter 106 that corresponds to the radio transmitting section claimed and transmits the signals as IR pulses (i.e., radio signals) (column 3, lines 3-7).

7. Regarding Claims 4 and 5, Sulavuori further discloses pulse width to bit time ratios of 0.128 (i.e., 12.8%) (column 6, lines 17-29) and 0.064 (i.e., 6.4%) (column 6, lines 30-44), either of which meets the ranges of both claims.
8. Regarding Claim 8, Sulavuori discloses a receiving apparatus (Fig. 4B) comprising: an IR receiver 206 that corresponds to the radio receiving section claimed and receives infrared pulses that correspond to the return-to-zero digital signals claimed obtained by converting speech signals from an interface 100 into a digitized speech signal 11 in an NRZ 1-bit data stream (Fig. 1, waveform B); using a high level for digital “1” and a low level for digital “0” (Fig. 1, waveform B), and using a pulse with a pulse width smaller than the pulse width of the NRZ signal to represent the high level (Fig. 1, pulse P) and a low level to represent the low level (Fig. 1) (column 3, lines 14-30); a pulse stretching block 215 that corresponds to the drive section claimed and transforms received pulses into a binary digital signal that corresponds to the return-to-zero drive signals claimed to drive a speech decoding block 216, low-pass filter 217 and earphone 210 that together correspond to the sound output section claimed and convert the electrical signals into sound signals (column 8, lines 24-30; column 7, lines 49-64).
9. Regarding Claim 10, Sulavuori further discloses a pulse stretching block 215 that corresponds to the pulse width extension section claimed (column 8, lines 24-30; column 7, lines 49-64).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2615

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sulavuori in view of admitted prior art.

12. Regarding Claim 3, as shown above apropos of Claim 2, Sulavuori anticipates all elements except use of the physical layers of Fast IrDA physical layer digital infrared communication standard. As applicant admits in the claim, the physical layers of Fast IrDA is a physical layer digital infrared communication standard. Sulavuori discloses a digital infrared communication interface. One skilled in the art would have known that use of a standard interface facilitates design and availability of components and insures operability. It would have been obvious to one skilled in the art at the time of the invention to apply the standard physical layers of Fast IrDA to the transmitter taught by Sulavuori for the purpose of realizing the aforesaid advantages.

13. Regarding Claim 9, as shown above apropos of Claim 8, Sulavuori anticipates all elements except use of the physical layers of Fast IrDA physical layer digital infrared communication standard. As applicant admits in the claim, the physical layers of Fast IrDA is a physical layer digital infrared communication standard. Sulavuori discloses a digital infrared communication interface. One skilled in the art would have known that use of a standard interface facilitates design and availability of components and insures operability. It would have been obvious to one skilled in the art at the time of the invention to apply the standard physical layers of Fast IrDA to the transmitter taught by Sulavuori for the purpose of realizing the aforesaid advantages.

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sulavuori in view of any one of Law (US Patent 6,064,699), Smith III et al. (US Patent 4,627,090) or Dean et al. (US Patent 5,008,964).

15. Regarding Claim 11; Sulavuori further discloses a low-pass filter 217 that filters the decoded speech signals before reproduction by earphone 201. Therefore, Sulavuori anticipates all elements except a high pass filter that removes a DC component. Law discloses a CVSD demodulator (Fig. 12C) with a capacitor C11 that corresponds to the high pass filter claimed and removes a DC component in the input to amplifier 270 (column 7, lines 57-62). Smith discloses a CVSD demodulator (Fig. 2) with capacitors (output of amplifier in 500 and input of loudspeaker 560) that correspond to the high pass filter claimed and remove a DC component in the input to amplifier 104 and loudspeaker 44. Dean discloses a CVSD demodulator (Fig. 3C) with capacitors (Fig. 7, output of 100 and between 104 and 44) that correspond to the high pass filter claimed and remove a DC component in the input to amplifier 104 and loudspeaker 44. One skilled in the art would have known that such an arrangement optimizes the dynamic range of the amplifier and loudspeaker. As such, it would have been obvious to one skilled in the art at the time of the invention to apply the high-pass filtering capacitor taught by any one of Law, Smith or Dean to the receiver taught by Sulavuori for the purpose of realizing the aforesaid advantage.

16. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sulavuori in view of any one of Law, Smith or Dean and further in view of Hamasaki et al. (US Patent 5,815,051) and Quintus et al. (US Patent 4,833,418).

17. Regarding Claims 12 and 13, as shown above apropos of Claim 11, the combination of Sulavuori and any one of Law, Smith or Dean makes obvious all elements except the structure of the filters claimed. A low-pass filter disclosed in Quintus (Fig. 3, reference 150; column 5, lines 43-54) and a high-pass filter disclosed in Hamasaki (Fig. 16; column 8, lines 47-60) that combine to form the filter section claimed. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use the filter structures of Quintus and Hamasaki in the combination made obvious by Sulavuori and any one of Law, Smith or Dean. Applicant has not disclosed that the particular filter structures claimed provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with the filter structures taught by Quintus and Hamasaki in any relative disposition because the changing the relative position of cascaded passive filters does not affect the resultant characteristic. Therefore, it would have been obvious to one of ordinary skill in the art to modify the combination made obvious by Sulavuori and any one of Law, Smith or Dean to obtain the invention as specified in Claims 12 and 13.

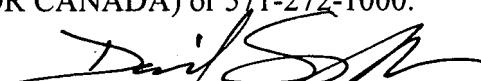
### ***Conclusion***

Examination of this application has been transferred to the undersigned. Any inquiry concerning this communication or earlier communications from the examiner should be directed

to Daniel Swerdlow whose telephone number is 571-272-7531. The examiner can normally be reached on Monday through Friday between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh H. Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel Swerdlow  
Primary Examiner  
Art Unit 2615

ds  
6 June 2007